

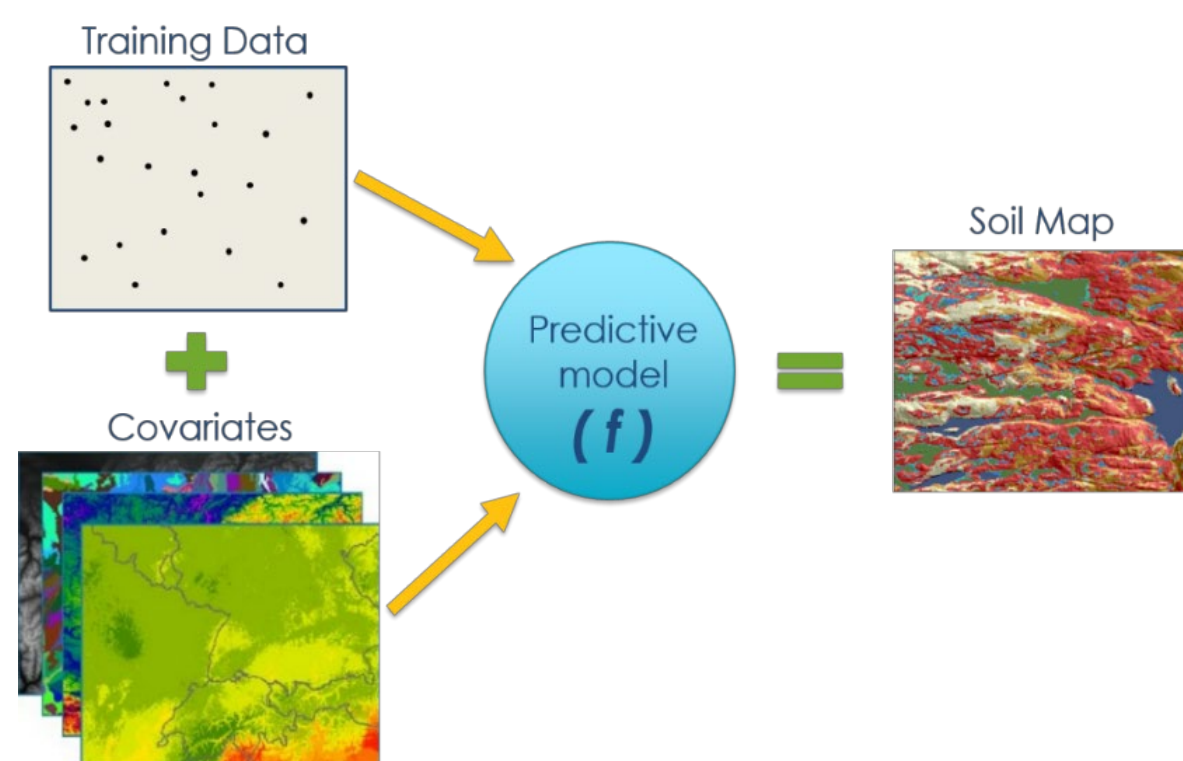


Soil Landscapes of the United States (SOLUS): A 21st Century Raster Soil Survey Product

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Objectives

- Utilize a digital soil mapping workflow to provide consistent property maps of the continental United States
- Create a product that can be easily updated



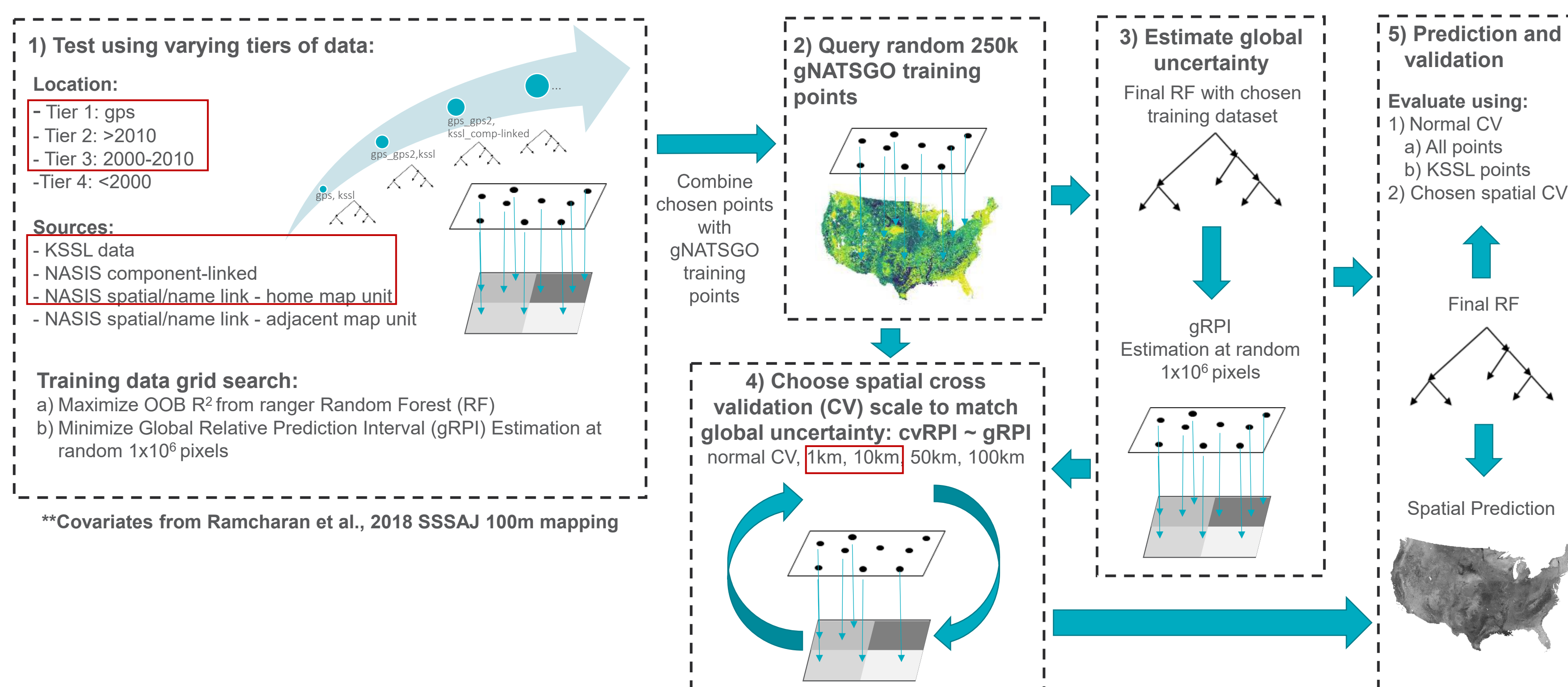
SOLUS100 Properties

- Depth to bedrock (cm)
- Depth to restriction (cm)
- Sand, silt, clay (%)
- Sand fractions (very fine, fine, medium, coarse, very coarse) (%)
- Rock fragment volume (%)
- Bulk density (g/cm³)
- Soil organic carbon (%)
- pH
- Effective cation-exchange capacity (ECEC) and CEC7 (meq/100g)
- Gypsum content (%)
- CaCO₃ (%)
- Sodium adsorption ratio
- EC (mmhos/cm)

Details

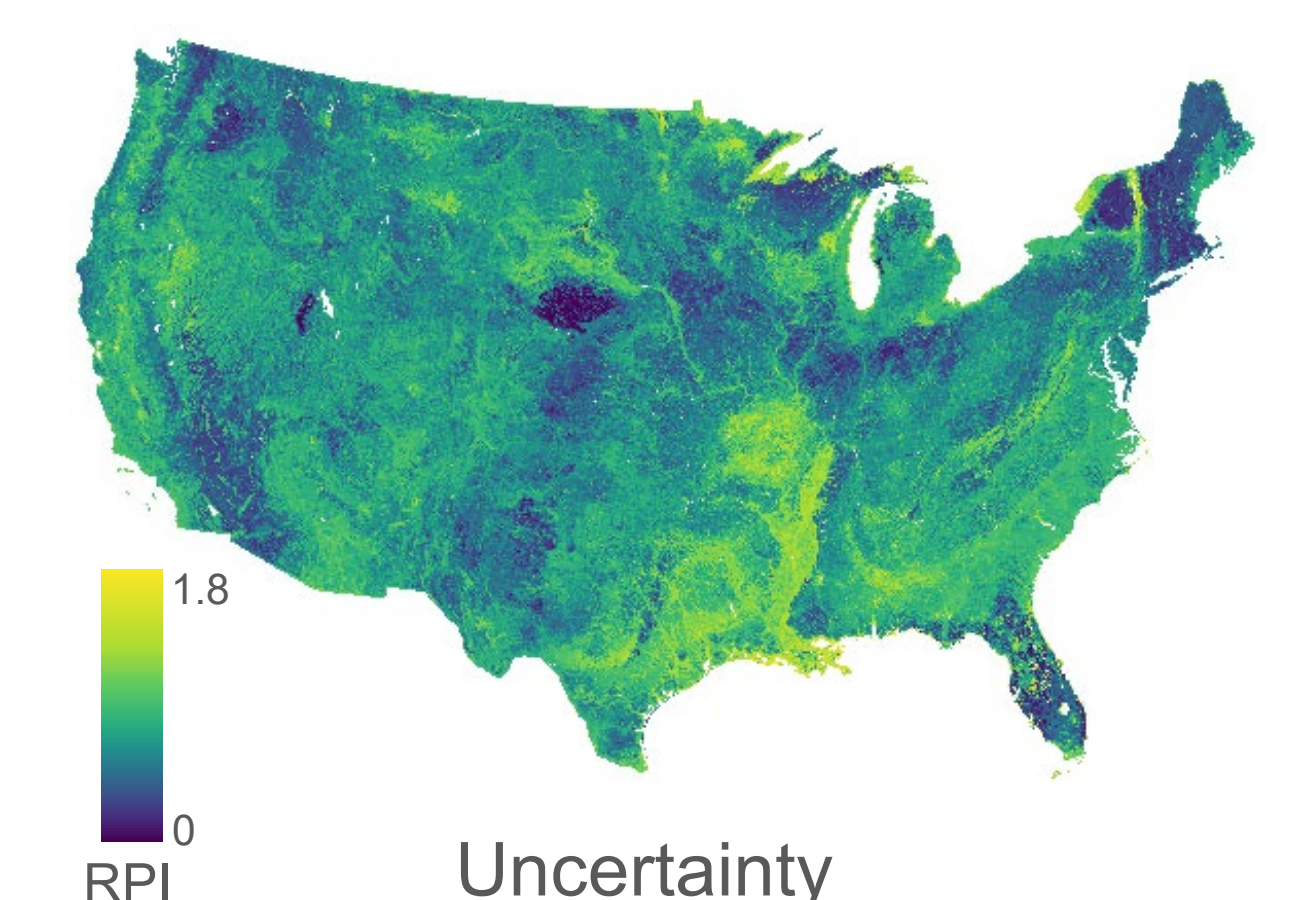
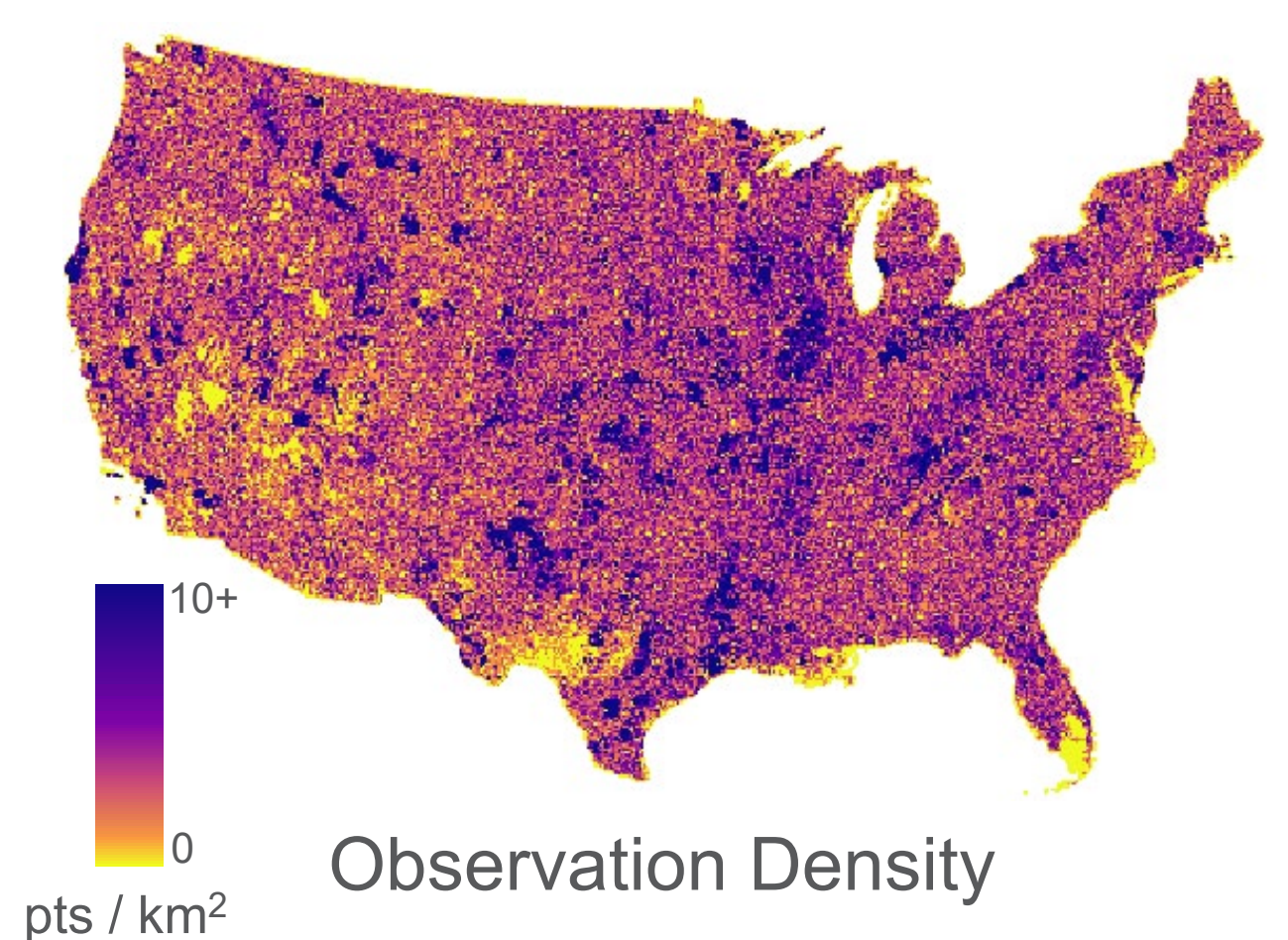
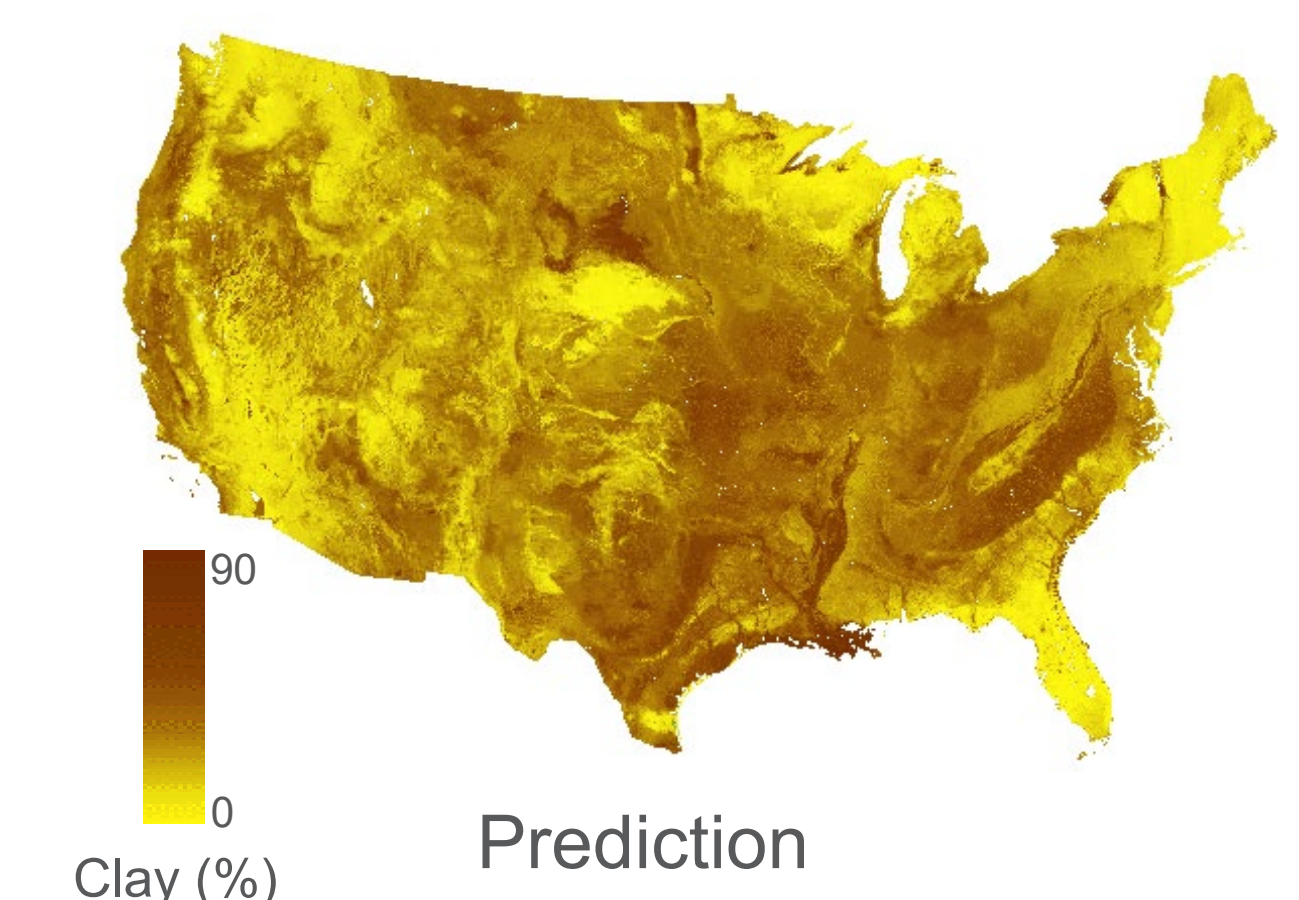
- Phase 1: 100 m
- Phase 2: 30 m
- Harmonized depths (0, 5, 15, 30, 60, 100, 150 cm)
- Prediction uncertainty
- Accuracy metrics
- Standards: National Soil Survey Handbook Part 648
- 30-day open comment period (ended July 1, 2023)
- Annual update with newly acquired data and evolving modeling approach

Workflow



**Covariates from Ramcharan et al., 2018 SSSAJ 100m mapping

Results—Clay Percentage at 60 cm



Future Focus

- 30 m property maps
- Prediction of dynamic soil properties
- Property maps to support
 - Dynamic soil survey
 - Agency modeling tools
 - Environmental modeling and assessment
 - Interpretations
 - And more...**

